

Lesson 3

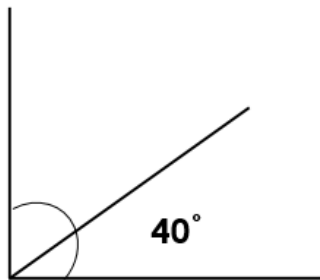
L.0 I am learning to calculate angles.

Fluency

Key vocabulary: Acute, Obtuse, Right, Straight line, Reflex

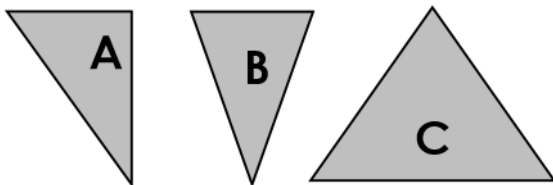
Your answer

2a. What is the missing angle?



2a. **50°**

5b. Identify the triangle which has a right angle.



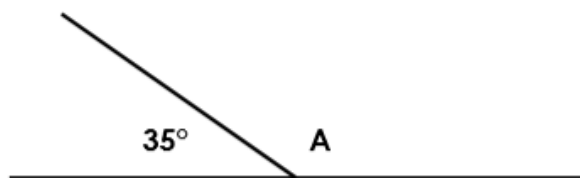
5b. **A**

Complete the stem sentence.

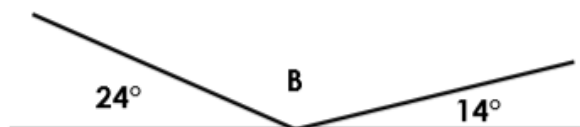
Angles on a straight line total _____ degrees.

Angles on a straight line total **180** degrees.

Use what you know to find all of the missing angles.

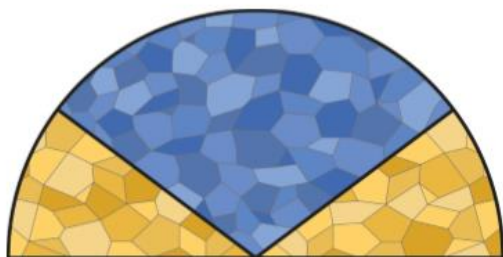


Angle A is **145°**.



Angle B is **142°**.

One angle of the stained glass window measures 108° .
The other angles are equal.



What is the size of the equal angles?

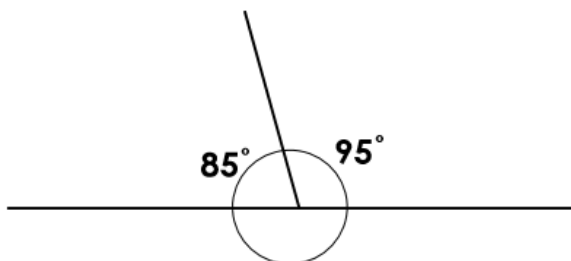
Complete the stem sentence.

Angles around a _____ total ____ degrees.

The equal angles measure 36° .

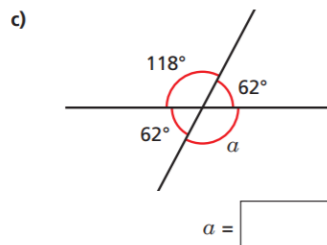
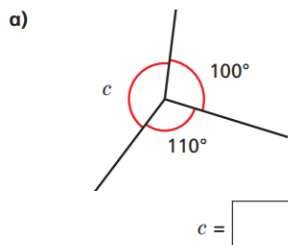
Angles around a **point** total **360** degrees.

7a. What is the missing angle?

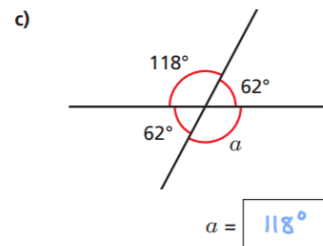
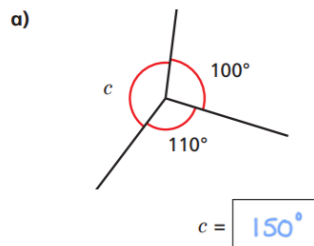


7a. **180°**

Work out the unknown angles.



Work out the unknown angles.



12b. True or false?

79° and 126° and 155° is equal to a full turn.

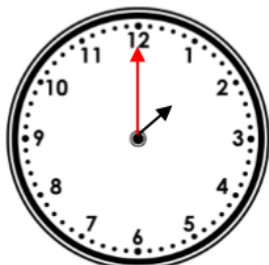
12b. **True. $79^\circ + 126^\circ + 155^\circ = 360^\circ$**

Reasoning

Key vocabulary: Acute, Obtuse, Right, Straight line, Reflex

Your answer

3a. The minute hand on the clock moves from the 12 to the 3. It makes a 70° angle. True or false?



Explain why.

True or False?

When calculating angles, you can use a protractor.

Explain your reasoning.

2b. $A = 20^\circ$, $B = 20^\circ$ and $C = 50^\circ$

D – The statement is false.

A – When calculating angles, you should not use a protractor.

B – The diagram of the angles on a straight line or around a point may not be drawn to scale so you must use the information given (along with addition and subtraction, and known facts) to find any missing angles.



Angle b is 116° because angles on a straight line add up to 180° .



Do you agree with Tommy? _____

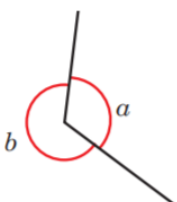
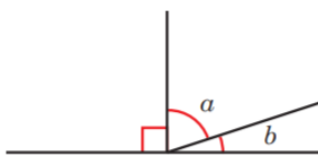
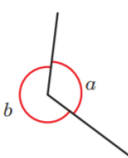
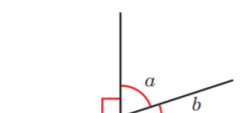
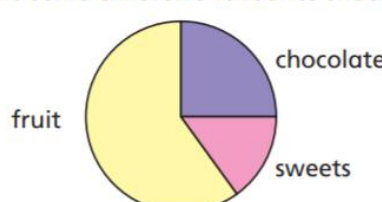
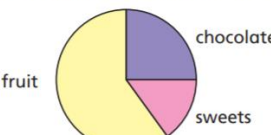
Explain your answer.

Do you agree with Tommy? No



Explain your answer.

The angles are not adjacent. There is not enough information to work out the size of angle b.

Problem Solving

Key vocabulary: Acute, Obtuse, Right, Straight line, Reflex	Your answer
<p>Use the information to work out the unknown angles.</p> <p>a) Angle a is half the size of angle b.</p> <p>b) Angle a is four times the size of angle b.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>$a =$ <input style="width: 50px; height: 20px;" type="text"/></p> <p>$b =$ <input style="width: 50px; height: 20px;" type="text"/></p> </div> <div style="text-align: center;">  <p>$a =$ <input style="width: 50px; height: 20px;" type="text"/></p> <p>$b =$ <input style="width: 50px; height: 20px;" type="text"/></p> </div> </div>	<p>Use the information to work out the unknown angles.</p> <p>a) Angle a is half the size of angle b.</p> <p>b) Angle a is four times the size of angle b.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>$a =$ <input style="width: 50px; height: 20px; border: 1px solid blue;" type="text" value="120°"/></p> <p>$b =$ <input style="width: 50px; height: 20px; border: 1px solid blue;" type="text" value="240°"/></p> </div> <div style="text-align: center;">  <p>$a =$ <input style="width: 50px; height: 20px; border: 1px solid blue;" type="text" value="72°"/></p> <p>$b =$ <input style="width: 50px; height: 20px; border: 1px solid blue;" type="text" value="18°"/></p> </div> </div>
<p>The pie chart shows some children's favourite snacks.</p> <div style="text-align: center;">  </div> <p>A quarter of the children said chocolate was their favourite snack. Five times as many children voted for fruit as voted for sweets. Work out the size of the angle for each sector in the pie chart.</p> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">chocolate <input style="width: 50px; height: 20px;" type="text"/></div> <div style="text-align: center;">sweets <input style="width: 50px; height: 20px;" type="text"/></div> <div style="text-align: center;">fruit <input style="width: 50px; height: 20px;" type="text"/></div> </div>	<p>The pie chart shows some children's favourite snacks.</p> <div style="text-align: center;">  </div> <p>A quarter of the children said chocolate was their favourite snack. Five times as many children voted for fruit as voted for sweets. Work out the size of the angle for each sector in the pie chart.</p> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">chocolate <input style="width: 50px; height: 20px; border: 1px solid blue;" type="text" value="90°"/></div> <div style="text-align: center;">sweets <input style="width: 50px; height: 20px; border: 1px solid blue;" type="text" value="45°"/></div> <div style="text-align: center;">fruit <input style="width: 50px; height: 20px; border: 1px solid blue;" type="text" value="225°"/></div> </div>

Extension

Key vocabulary: Acute, Obtuse, Right, Straight line, Reflex	Your answer
<p style="text-align: center; color: blue; font-weight: bold; letter-spacing: 0.5em;">True or False ?</p> <p style="text-align: center;">The angle between 12 and 4 is equal to 120°</p> <div style="text-align: center; margin-top: 20px;">  </div>	<p style="text-align: center; font-size: 2em; font-weight: bold;">True</p> <p>A clock face is a circle divided into 12</p> $360^\circ \div 12 = 30^\circ$ <p>The turn between each number is 30°</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 20px;">  <div style="margin-left: 20px;"> $30^\circ \times 4 = 120^\circ$ </div> </div>